33 simple 'Bullet Points' prove CO2 is innocent of global warming: by a GEOLOGIST for a change

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33 simple 'Bullet Points' prove global warming is not due to CO2: by a *geologist* for a change

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NB:
I have re-numbered many of these bullets. Therefore, if citing this article, please mention the '21st Feb 2023 update'. I have also modified the title (formerly "33 simple 'Bullet Points' prove global warming by the Sun, not CO2: by a geologist for a change"), to reflect my 2022 discovery that warming by airborne soot (from burning coal and diesel) now outweighs Sun-driven warming and cooling.

Abbreviations:
'AD' = anno Domini; 'BC' = years 'before Christ'; 'BP' = years 'before present', from radiocarbon dating (0 is 1950AD by convention); ~ = about/approximately

1) The IPCC (***United Nations*** Intergovernmental Panel on Climate Change) focuses on only the last 170 years (i.e. since 1850, by which time a global network of reliable thermometer-stations existed), yet Earth is **26 million (sic) times older**, 4.5 billion years. Geologists know that, throughout this time, Earth has constantly warmed or cooled (never static). Thus ***'climate change'*** (warming or cooling) is perfectly usual. Shockingly, the IPCC has ***no geologists*** among the hundreds of authors of its 5th Assessment Report (2013/14) and, at most, 1 geologist for the 6th Assessment Report (Summary for Policymakers released October 2021).

2) The IPCC's very ***existence*** relies on public belief in 'Anthropogenic (Man-Made) Global Warming' (AGW) by the 'greenhouse effect' (Bullet 6) of carbon dioxide (CO2) emissions. Most IPCC authors, mainly government and university researchers, are biased by strong vested interests in greenhouse AGW, i.e. their own research grants, salaries, and their previous publications demonising CO2. Similarly, universities have sacrificed their impartiality by hosting institutes financially mandated to promote CO2-driven AGW. For example, London's former bastion of scientific integrity Imperial College (where I obtained my BSc Hons ARSM in 1975) has, since 2007, lamentably housed the 'Grantham Institute - Climate Change and the Environment', founded and funded by investment magnate Jeremy Grantham (heavily involved in forest destruction for biomass energy according to the 2019 Michael Moore/Jeff Gibbs documentary 'Planet of the Humans'). The 'Tyndall Centre for Climate Research' (founded 2000 and named after John Tyndall [Bullet 6]), has branches at the Universities of Cardiff, Manchester, Newcastle and Fudan, and also at the University of East Anglia, in the same building as the infamous IPCC-linked Climatic Research Unit (CRU; Wiki 'Climategate').

3) Well-known scientists formerly associated with the IPCC have subsequently denounced its methods.

4) The claimed ***'97% consensus among scientists'*** that CO2-driven AGW exists is widely misunderstood and misquoted. It refers in fact to polls of only ***recent publications*** by only '***climate*** scientists', i.e. specialists lacking deep-time perspective (Bullet 1) who deal with famously unreliable 'climate models' (Bullet 8). The vast majority of the world's ***normal*** scientists, numbering millions, has never been polled, myself included. In November 2019 Wikipedia deleted its "List of scientists who disagree with the scientific consensus on global warming" (Bullet 31).

5) No informed person 'denies' global warming: thermometers have measured it. The NASA-GISS global temperature graph (land-ocean annual average, 1880-2022) shows 1.3C° of warming between 1910 and 2018 (smoothed red curve; note very slight cooling, 0.03C°, since 2018). The very similar HadCRUT graph (latest version HadCRUT5), based on the same data (same weather stations) but differently processed and going further back in time (1850), shows the same. On the NASA-GISS chart, this 'Modern Warming' (name proposed here) was preceded by ~30 years of overall cooling (1880-1910) and was interrupted by: (i) a 7-year cooling (1942-49); (ii) an ensuing 25-year hiatus (1949-74); and (iii) a 2004-2011 hiatus (see 'Global warming hiatus', Wiki; also seen in smoothed HadCRUT4 graph, but absent in version HadCRUT5 !). Throughout both graphs are higher-frequency oscillations lasting 2-6 years each (spiky annual black line); some of these are probably attributable to 'ENSO' events (El Niño/La Niña) and mega-'volcanic winters'.

6) "The greenhouse effect is the process by which radiation from a planet's atmosphere warms the planet's surface" (Wiki, accessed 4th Nov 2021, citing IPCC). This bold claim that Earth's land- and ocean surfaces are warmed by the air is 'backwards'. In fact the (solar-warmed) ocean warms the atmosphere, as shown by three observations: (1) through 1950-72, north Pacific and north Atlantic surface water was almost everywhere fractionally warmer than the air a few metres above it; (2) changes in global average surface air temperature follow (lag) 1 to 1.5 months behind corresponding changes in global sea-surface temperature; and (3) Antarctica has failed to warm in the last several decades (attributed to the ice sheet's high elevation delaying the landward penetration of ***ocean-warmed air***). These facts indicate that heat (only capable of flowing one way, from warmer to cooler) flows outward, from the ocean to the air, not vice versa. Thus, a truer summary of the greenhouse effect is that solar energy absorbed at Earth's surface is radiated back into the atmosphere as heat, some of which is absorbed on its way out to space by ***greenhouse gases***. Thus, greenhouse gases are merely insulators, reducing the air's heat loss to space, in the manner demonstrated experimentally in the 19th century by John Tyndall. Moreover, Wiki admits: "Greenhouse effect" is actually a misnomer since heating in the usual greenhouse is due to the reduction of convection, while the "greenhouse effect" works by preventing absorbed heat from leaving the structure through radiative transfer."

7A) CO2 is a ***'greenhouse gas' (GHG)***. Confirming CO2's greenhouse effect, satellite instruments show infrared (heat) energy escaping from Earth is slowed in the

wavelengths diagnostic of CO2. Repeat measurement 26 years apart showed that slowing increased, i.e. 'enhanced greenhouse effect' by growth of atmospheric CO2. Due to the ***'saturation effect'***, CO2's theoretical heat-trapping ability sharply (logarithmically) declines as its concentration rises. CO2's ***Climate Sensitivity*** (CS) is the hypothetical warming due to a doubling of CO2. The IPCC ***estimates*** that CS, based on defective climate models (Bullet 8) and circular reasoning, is ***probably*** between 1.5 and 4.5C°, ***a very large range***. According to a landmark new paper by van Wijngaarden & Happer (2020), CS for doubling of CO2 from 400 to 800 parts per million (ppm) is theoretically 1.4 to 2.3C°, but their calculations assume cloud-free conditions; the effect of clouds, which cover about two thirds of Earth at any moment (Wiki 'Cloud cover'), is ***very*** uncertain (Bullet 7C).

7B) Based on four observations, CO2 evidently causes no warming: (a) changes in CO2's growth-rate ***follow*** changes in rate of warming (Bullet 12); (b) since the ~1850 onset of the Industrial Revolution (start of large-scale man-made CO2 emissions), CO2 has risen almost continuously (see below), but this rise initially coincided with global *cooling* (1850-1908; HadCRUT5 smoothed global temperature, heavy black line); (c) the 'Modern Warming' (1910-2018, Bullet 5) was interrupted by cooling for 24 years (1942-66, HadCRUT5), unlike CO2's rise, which was punctuated only by a 4-year trivial decline (1ppm, 1940 to 1944); and (d) after the 24-year cooling, warming from 1966 to 2021 was essentially linear, unlike CO2's near-continuous acceleration.

7C) Therefore, CO2's greenhouse effect, already reduced logarithmically "well into the saturation regime", is presumably countered by negative feedbacks. Two natural feedbacks ***ignored*** in IPCC climate models are: (i) little-known cloud feedback; and (ii) "potentially very important" increased biogenic 'BVOC' aerosol due to faster forest growth thanks to warming and CO2 fertilization. IPCC admits "aerosols and their interactions with clouds have offset a substantial portion of global mean forcing from ... greenhouse gases. They ... contribute the largest uncertainty"; and "quantification of cloud and convective effects in models, and of aerosol–cloud interactions, continues to be a challenge." IPCC's underestimation of negative feedbacks might explain why climate models run too hot (Bullet 8), and why 'runaway' greenhouse warming has apparently never occurred on Earth.

8A) Computer 'climate models' (by 'climate scientists'; Bullet 4) are so full of assumptions (which are piled upon other assumptions) as to be highly misleading at best, e.g. 1985-2015 warming forecast by 31 models turned out 2 to 4 times too high. Even pro-IPCC 'tricky Wiki' (Bullet 31) admitted: "Each model simulation has a different **guess** *(Higgs emphasis)* at processes that scientist don't understand sufficiently well". A new book by a former science advisor to US President Obama highlights climate models' unreliability and failure to reconstruct 20th Century temperatures accurately (Koonin 2021).

8B) Climate models ignore three crucial factors: (i) natural cloud and aerosol-cloud feedbacks (Bullet 7C); (ii) large changes in solar magnetic output (SMO; Bullet 18) said to drive global temperature changes (Svensmark Theory), denied by the IPCC (Bullet 20) and by NASA, which both disingenuously assert that total solar irradiance (TSI, which changes in lockstep with SMO but ***far*** less, and not strictly proportionally) varies much too little to affect climate, so CO2 must be in charge. NASA went so far as to title a publication 'Atmospheric CO2: Principal Control

Knob Governing Earth's Temperature' (2010); and (iii) 'ocean-lag', the ~150-year delay between changes in SMO and correlative changes in temperature (Bullets 13, 14). These IPCC failings, namely feedback underestimation, 'Sun denial' (dismissal of solar variations), ocean-lag omission, and fixation on CO2, mean that all climate modeling conducted to date is misleading (worse than useless).

9A) Atmospheric CO2 is currently (February 2023) only 420 ppm, i.e. just 0.04% of our atmosphere (less than half of one-tenth of 1%). For much of the last 550 million years (Phanerozoic time), the concentration was 2 to 10 times higher. Evolution flourished. Plant photosynthesis, the basis of all life, was stimulated by higher CO2 (Bullet 9D). Extinction events due to overheating by CO2 are unknown.

9B) For Phanerozoic time as a whole, atmospheric CO2 and global temperature correlate quite well, but sample resolution is low (wide age-spacing). This rough correlation is readily explained by slow plate-tectonic rearrangement of continents, such that the changing latitudinal distribution of the world's ocean (hence varying exposure to solar insolation) made its average temperature rise and fall, causing it to release and absorb CO2 respectively (Bullets 11, 12). For briefer intervals with higher resolution (closer sample spacing), such as our current 'Holocene' interglacial epoch (i.e. the last 11,650 years), the correlation is worse (Bullets 7B, 22).

9C) Through Holocene time, atmospheric CO2 (determined from Antarctic ice cores) was only 250-285 ppm (i.e. not far above plant-starvation level of ~150 ppm), until ~1850 when mankind's industrial CO2 emissions began. Since then, CO2 has climbed steeply. Three observations prove that man's activities are the main driver of this post-1850 accelerating rise in CO2: (i) ice cores show that the last five interglacial periods (including the pre-1850 portion of the Holocene) all reached levels of 250-300 ppm (contrast intervening glacials 185-195ppm), evidently an equilibrium value for normal interglacial conditions. However, CO2 is now significantly higher, 420ppm (February 2023); (ii) the increase in CO2 between 1800AD and today is ~70% larger than that between 17,500 and 11,500 years ago (recovery from last glacial), and it occurred 100-200 times faster. Only fossil fuels contain enough carbon to produce such a massive change so quickly; and (iii) changes in the ratios of carbon isotopes (carbon-12, -13 and -14) in atmospheric CO2 since 1850 unequivocally indicate that the additional CO2 is almost entirely from (combustion of) fossil fuels.

9D) The present atmospheric CO2 concentration of 420ppm (Feb 2023) is far from hazardous to human health. For example, CO2 in US Navy submarines typically averages 3,000-4,000ppm, with no reported ill effects. Benefits of rising CO2, thanks to the 'CO2 fertilization effect', include expansion of natural forests ('greening' of the planet) and increased agricultural productivity, essential for feeding Earth's burgeoning population. Thus, ironically, man's production of CO2 by burning fossil fuels (for energy and transport) has unintentionally averted, or at least postponed, a global food crisis. Commercial growers inject CO2 into greenhouses: "CO2 enrichment in greenhouses allows crops to meet there (sic) photosynthesis potential" (DutchGreenhouses.com). "For most crops the saturation point will be reached at about 1,000–1,300 ppm ... Increased CO2 levels will shorten the growing period (5%–10%), improve crop quality and yield" (Government of Ontario).

10) The Little Ice Age (LIA) "has been conventionally defined as extending from the 16th to the 19th centuries, but some experts prefer an alternative timespan from about 1300 to about 1850" (Wiki, accessed 5th Nov 2021). In fact, the LIA spanned 1440 to 1920 (Higgs 2022). The LIA has been ascribed to solar weakening (Denton & Karlén 1973; Lean & Rind 1999). Instead, Miller et al. (2012) opined: "The coincidence of repeated explosive volcanism with centuries of lower-than-modern solar irradiance ... indicates that volcanic impacts were likely reinforced by external forcing ... but that an explanation of the LIA does not require a solar trigger". On the contrary, dominance of solar control is obvious from the strong correlation between the LIA and a prolonged solar lull, after applying a 150-year temperature lag (Higgs 2022). As far as I know, the LIA has never been blamed on declining atmospheric CO2 (i.e. reduced greenhouse effect). Indeed, from ~1600 to 1800AD, CO2 was ~10ppm lower than the ~285ppm of the centuries before and of the decades after (prior to the 1850-onward rise by man's industrial emissions; Bullet 7B). This ~3.5% decline is readily attributable to the increased solubility of CO2 in a cooler ocean.

11) Regional and global average temperatures, prior to the ~1850 establishment of a reasonably extensive global network of reliable thermometers, are determined from 'proxies' (e.g. tree-ring widths, ice-core isotopes). A compilation of proxies (PAGES2k 2019) indicates ~0.1C° global warming between ~1815 (final cold spike of Little Ice Age [Bullet 10]) and 1850 (approximate start of large-scale man-made CO2 emissions]). The 1750-onward Berkeley graph of *land* temperature (world average) shows more much more warming, ~0.8C°, based on thermometer records, but with large error-margins for pre-1850 temperatures. This warming was accompanied by a trivial rise in CO2 (1ppm, reaching 285ppm, i.e. only 0.4% rise; measured in ice cores), readily ascribed to ocean water releasing CO2 by warming (Bullet 10). After applying a 150-year 'ocean lag' (Bullets 13, 14), the 1815 to 1850 warming equates to an increase in solar-magnetic output.

12) Additional evidence that global warming is not a ***consequence*** but a ***cause*** of rising CO2 (released by warming oceans; additional to man's emissions [Bullet 9C]) is that Pleistocene (~2.5 million years ago until Holocene) 'Ice Age' glacial-interglacial temperature changes were ***followed*** "very closely" by changes in CO2. Based on ice-core data, the time-lag has been determined as somewhere between 400 years and zero, or possibly negative. The uncertainty is because air is free to migrate in the upper snowpile, above the 'lock-in depth'. Greatly narrowing the uncertainty, analysis of post-1950 direct atmospheric CO2 and thermometer data by two research groups found that changes in the *rate* of CO2 growth follow changes in the rate of warming by ~5 months and by 11-12 months.

13) Graphs of solar-magnetic output and global average temperature (based on proxies, Bullet 11) spanning the last 9,000 years correspond well (matching long-term trends and shorter-term 'sawteeth' [up-down] and major peaks [high, low]) after subtracting a ~100-200-year temperature delay, here termed 'ocean lag', attributable to the ocean's vast volume, high heat capacity, and slow global conveyor-belt circulation (AMOC, Bullet 21). This correlation supports the Svensmark Theory (Bullet 20). The 100-200-year lag is not detectable using NASA-GISS and HadCRUT temperature charts (Bullet 5) because (i) these charts span only 172 years (1850-2022) and 142 years (1880-2022) respectively, and (ii) since 1940, solar

control of global temperature is outweighed by man-made warming by soot emissions (Bullet 16). Previous authors have proposed temperature lags ranging from 10 to 100 years. The similarity of my ~100-200-year ocean lag to North Atlantic Deep Water (a component of AMOC) calculated "ventilation time" (~100 years; Broecker 1979) and "residence time" (~180 years; Broecker 1991) suggests that they are related.

14) The 9,000-year correlation between solar-magnetic output and (lag-corrected) global temperature (Bullet 13) is equally obvious on published graphs covering only the last 2,000 years. Again, subtracting a ~150-200-year temperature delay ('ocean lag'; Bullet 13) aligns the main spikes on each graph, e.g.: (i) the ~300AD solar grand maximum (Bullet 18) aligns with the ~450AD temperature peak, perhaps the second warmest of the last 2,000 years (but surpassed by the 2016 peak); and (ii) the ~1300-1700 cluster of extreme solar minima aligns with the ~1450-1850 cluster of extreme temperature minima (within the Little Ice Age [Bullet 10]). For the final 1,000 years, the temperature graph has a hockey-stick shape, as recognised by Michael Mann (Bullet 32); likewise the solar graph (Usoskin et al. 2005). Superimposed on both the 'shaft' (or 'handle') and 'blade' of the 'hockey stick' are lower-amplitude 'sawteeth' spanning 50-200 years each.

15) In contrast to the good match between global temperature and solar-magnetic output for the last 9,000 years (Bullets 13, 14), CO2 and temperature correlate poorly (e.g. Bullet 22), except a partial coincidence near the very end, since 1910 (Bullet 7B).

16) Remarkably, the 9,000-year visual match between graphs of (lag-corrected) global temperature and our Sun's magnetic output (Bullet 13) breaks down in the 20th Century: post-1940 warming is disproportionally large for the corresponding solar output. Given the poor match with CO2 (Bullet 13), this decoupling may implicate: (i) man-made airborne 'black carbon' (soot from burning coal and diesel oil), which warms the atmosphere by absorbing solar radiation; and/or (ii) waste heat (e.g. ~65% of energy produced by power stations is waste heat). Three observations firmly incriminate soot (Higgs 2022 Geological Society of America; Higgs 2023 European Geosciences Union). Firstly, warming on land (most coal- and diesel burning occurs there) is 3 times faster than the oceans (NASA-GISS and HadCRUT charts). Likewise, warming in the northern hemisphere (most of the world's land and industry) is 3 times southern. The simple explanation is that airborne soot particles (which warm the air by absorbing solar radiation) disperse poorly, lingering near their sources (cities, factories, power stations). In stark contrast, atmospheric CO2 concentration is nearly constant worldwide, due to CO2's highly efficient mixing. If CO2 were *really* Earth's 'temperature control knob', modern warming would be much more uniform areally. Secondly, the differential warming (land-vs-ocean and N-vs-S hemisphere) began abruptly in 1985, 25 years after world annual oil consumption tripled in 1960. Thirdly, warming since 1985 has a distinctive 'stair-step' style (i.e. with two slowdowns), mimicking (with 10-20-year lag) the stepped rise in global coal consumption.

17) Further underscoring the Sun's strong influence on climate: (a) the HadCRUT temperature graph has been shown to contain solar frequencies; (b) mega-volcanoes,

causing ‘volcanic winters’ (Bullet 5), coincide with low solar output (Bullet 10); and (c) ENSO events (Bullet 5) are Sun-related.

18) Solar-magnetic output (SMO) surged 131% (more than doubling) from 1902 to the 1991 peak of our Sun's modern grand maximum' (GM; 1937-2004). This was the largest multi-decade surge, to the highest peak, in at least 9,000 years. (NB the highest *sunspot* peak was earlier, 1958, i.e. sunspots are not an entirely faithful proxy for SMO [Bullet 8B].) Discussing the Sun's modern GM, Steinhilber et al. (2008) said: "The last period which showed similar high activity and also lasted as long ... was about 1700 years ago". That particular ~300AD GM caused a global-warming event (delayed ~100 years by ‘ocean lag’; Bullets 13, 14) and a resultant rapid (<100 years) global 2-3-metre (m) sea-level (SL) rise spanning ~350-450AD, the 'Romano-British Transgression', one of numerous such ‘Fairbridge-type’ SL rises in the last 10,000 years (Bullet 28). **Another such rise will begin in the next 20 years (Higgs 2022), of at least 2m and possibly > 5m**, due to warming by man-made airborne soot (Bullet 16), augmented from ~2090 by ocean-lagged (Bullets 13, 14) warming by the modern GM.

19) On the HadCRUT5 global temperature graph spanning 1850 to 2022 (Bullet 5), 2016 was the warmest year since thermometer records began (i.e. only since 1850, in a 4.5 billion-years-old world; Bullet 1). The years 2017 to 2022 were all cooler. On the complementary NASA-GISS graph, the record-breaking 2016 temperature was subsequently changed (adjusted downward, in 2021), making 2020 appear warmest.

20) The breathtakingly elegant and simple Svensmark Theory says rising solar-magnetic output, by deflecting more cosmic rays, reduces cloudiness. This allows more of the Sun’s warmth to heat the ocean and hence warm the atmosphere (Bullet 6), instead of being reflected back into space by clouds. In support, a NASA study of satellite data spanning 1979-2011 (during the ‘Modern Warming’; Bullet 5) showed decreasing cloud cover. Other authors have also suggested a prominent role for the Sun in causing global temperature (Bullet 23). In stark contrast, the IPCC and others claim that solar variations have negligible effect on global temperature (Bullet 33). This ‘Sun-denialism’ (see also Bullet 8B) may partly reflect the IPCC's failure to consult geologists (Bullet 1).

21) Vocal climate scientist, computer modeler, a 'lead author' of the IPCC, and recipient of a 1999 US$1 million private donation to work on his idea that man-made warming might stop 'Atlantic conveyor belt' (google AMOC) ocean circulation, with dire consequences for climate (regional *cooling*!), ecosystems and society, Stefan Rahmstorf (Wiki) of the Potsdam Institute for Climate Impact Research wrongly said in 2008: "there is no viable alternative ... *[to CO2 as driver of 1940-2005 warming, as]* ... different authors agree that solar activity did not significantly increase” (my italics). Yet in 1999, eminent physicist Dr Michael Lockwood FRS (Wiki) and his co-authors wrote in prestigious Nature journal that from 1964 to 1996 "the total magnetic flux leaving the Sun has risen by a factor of 1.4” (i.e. by 40%), and from 1901 to 1992 by **2.3** (i.e. by 130%, more than double). Supporting Lockwood's work, Steinhilber et al. (2010) showed that "Since the year 1700, the open solar magnetic flux has increased by about 350%".

22) From 8,000 to 2,000BC, Earth was ***warmer than now,*** except for about five cooler interludes of a few decades each. Embarrassingly for the IPCC, this 6,000-year warm interval was already called the 'Holocene Climatic ***Optimum***' (Wiki) before IPCC's facile 'CO2 = pollutant' fallacy induced today's climate hysteria and the drive to spend trillions of dollars on 'carbon capture and storage' (CCS), needlessly and counter-productively, as atmospheric CO2 is still only 420ppm, well below the ~1,000ppm ideal for crop- and forest growth (Bullet 9D). During Holocene warmer-than-now episodes, civilizations flourished. A well-known *cold* episode about 4,200 years ago caused civilizations to collapse.

23) Overall global cooling, driven by Earth's declining axial obliquity (one of the Milankovitch orbital parameters), occurred from 4,000BC to the ~1,500AD nadir of the Little Ice Age. This cooling mocks IPCC computer models (Bullet 8) that instead predict ***warming*** by the simultaneous (slow) rise in CO2. This is the "The Holocene Temperature Conundrum" of Liu et al. (2014). Superimposed on this cooling are convolved (stacked) temperature cycles (each lasting decades to ~2,000 years) that clearly correlate with solar fluctuations, offset by a time lag attributable to 'ocean lag' (Bullets 13, 14). My discovery of this climate/solar correlation supports previous authors who attributed 1,000-2,000-year climate cycles in Pleistocene and Holocene ice cores and ocean-sediment cores to solar variations. Such Sun-driven cycles are probably pervasive throughout geological time (Franco et al. 2012).

24) The IPCC asserts that ongoing solar weakening (since 1991; Bullet 18) simultaneous with global warming disqualifies the Sun as the cause of warming. This disingenuously ignores oceanic thermal inertia (Bullets 13, 14), of which the IPCC is well aware. After correcting for the resulting 'ocean lag' temperature delay, the Sun's past 'ups-and-downs' ('sawteeth') align with global temperature ups-and-downs (Bullets 13, 14). Thus, one of the three pillars of supposed anthropogenic CO2-driven warming is demolished. The other two are equally easy to dismiss, namely (i) Modern Warming's simultaneity with CO2's accelerating rise CO2 since 1850 (Bullet 26), and (ii) the claim that the 30cm sea-level rise since 1850 is unprecedented in 2,000 years (Bullet 28).

25) The last interglacial period, ~120,000 years ago, was warmer than our Holocene interglacial. Humans and polar bears survived! CO2 was about 275 ppm, i.e. ***lower*** than now (Bullet 9), at a time of greater ***warmth*** (due to higher Milankovitch insolation; Bullet 23).

26) The simultaneous rise of global average temperature and man-made CO2 since 1910 (Bullet 7B) is a ***'spurious correlation'.*** Temperature correlates much better with solar output, after applying a 150-year 'ocean lag' (Bullets 13, 14). Therefore, IPCC's demonising of CO2 as a 'pollutant' is a colossal blunder, wasting trillions of dollars on needless 'carbon capture and storage' (CCS). Instead, governments should focus urgently on the *imminent* ***Sun-driven sea-level rise*** **of *2-3 metres by ~2100*** (Bullet 18).

27) Whether or not human efforts to reduce CO2 are successful, within the next few millennia our benign Holocene 'interglacial' period will gradually end, by

Milankovitch orbital forcing (Bullet 23), introducing the next glacial period, reaching peak cold in ~50,000 years.

28) The IPCC says sea level (SL) from 0 to 1800AD varied <25cm (and <1m since 4000BC) ***and*** never exceeded today's SL, therefore the ***30***cm SL rise measured since 1850 is abnormal, they say, blaming industrial CO2. But this claim, based on cherry-picked evidence, all flawed, ignores ***dozens*** of studies, around the world, of geological and archaeological SL benchmarks ranging in age from 3000BC to 1000AD, collectively revealing three or four rapid 'Fairbridge-type' SL rises (and falls) of 1-5m, each lasting <200 years (Bullet 28), and ***all*** reaching higher than today, ***long*** before industrial CO2 (began ~1850), and all attributable to exceptional solar grand maxima. These Fairbridge-type SL rises allow prediction of another, commencing in the next 20 years (Bullet 18).

29) According to the IPCC, if industrial CO2 emissions were allowed to continue growing until 2080 and then slowly decline, atmospheric CO2 concentration would stabilize in ~2140 at a new equilibrium value of ~750ppm (beneficially nearer the optimum for plant photosynthesis [Bullet 22]). This is scenario RPC6.0 of the IPCC, whose modeling predicts that this rise in CO2 would cause ~2.5C° of warming between 2020 and 2150, after which the warming curve nearly flattens. But IPCC models are deeply flawed (Bullets 8, 23).

30) NASA's 'ClimateKids' website (accessed 1st Nov. 2021) says "Extra greenhouse gases in our atmosphere are the main reason that Earth is getting warmer". This ***belief***, stated as ***fact***, is based largely on guesswork (e.g. Bullet 7A). The website also frightens children with "today the planet is warming much faster than it has over human history". This unfounded claim refers to the NASA 1880-2022 thermometer graph's steepest sector (1975 to 2020; warmed 1C°, i.e. rate = 2.2C°/century). The claim is impossible to prove because, for the ***pre***-thermometer era (before 1850), only ***proxy***-temperature graphs (from ice cores etc.) are available for comparison with the post-1850 thermometer record ('apples and oranges'). Such proxy graphs, going back thousands of years, are of much lower resolution and are also invariably smoothed, both factors reducing the number and amplitude of proxy-temperature 'spikes', thereby hiding the true rates of short-term (decades) warmings. Society is in a bad way when formerly prestigious NASA, which once enthralled children by landing men on the moon, is reduced to scaring them with misinformation and false claims, damaging their mental health.

31) In March 2020 I exposed Wikipedia's November 2019 deletion of its ***'List of scientists who disagree with the scientific consensus on global warming'*** (Bullet 4), which named 79 PhD'd *renowned* scientists (each with his/her own Wikipedia entry) who have publically challenged the warming-by-CO2 delusion. (Tens of thousands of other 'skeptical' scientists are sadly too timid to join in, possibly scared for their jobs.) Thus, your children may never know that many prominent, impartial scientists disagree with the claim by the under-qualified, disingenuous IPCC (Bullets 1, 8, 24) that global warming is due to man-made CO2. This is global censorship by 'Tricky Wiki'. Fortunately, the list of scientists survives, both online (for now) and hard-copy (contact me for pdf).

32) The *'Hockey stick controversy*' (Wiki) refers to a temperature-proxy (Bullet 11) graph of the last 1,000 years by Michael Mann and co-authors, likened by climatologist Jerry Mahlman to a hockey stick, with its 'shaft' descending (cooling) into the Little Ice Age (Bullet 10), where it connects to a short, sharply rising 'blade'. "The original MBH98 hockey stick" (Mann 2012 p.50) is a graph spanning 1400AD to 1995 by **M**ann, **B**radley & **H**ughes 19**98**. The longer-handled 1000AD to 1998 "hockey stick ... of MBH99" is by the same authors. Many deniers of man-made, CO2-driven global warming accused Mann of fraudulently claiming the 1990s was the warmest decade of the last millennium (based on his hockey stick) by simply erasing the Medieval Warm Period (MWP) 'hump' portrayed on a schematic 900AD to 1950 temperature graph by Hubert Lamb (1965), pioneer palaeoclimatologist and originator of the MWP concept. The graph, re-published with minor alterations by the IPCC (Folland et al. 1990), shows the MWP crest at ~1150AD and warmer than today. But Lamb's graph of 1965 (predating many proxy techniques) was only a very crude approximation, based mostly on historical documents! Moreover, vindicating Mann, an authoritative proxy graph published 20 years later (PAGES2k 2019), extending further back in time to 1AD, showed that there was no global MWP. Instead, the MWP was confined to the North Atlantic region, and lasted only 150 years (950-1100AD; Mann et al. 2009, figs 1B and S5).

33) The IPCC assures us that world average temperature is controlled by CO2 and that the Sun has minuscule or zero effect. This is precisely backwards. In truth CO2 has little or no influence on climate (Bullets 7, 13). Solar-magnetic variations, on the other hand, controlled global-temperature changes (Svensmark Theory, Bullet 20) for at least the last 9,000 years (Bullets 13, 14), until overtaken in 1940 by warming induced by man's emissions of airborne soot from burning coal and oil (Bullet 16). Solar output variations even control the timing of major volcanic eruptions (affecting climate; Bullets 10, 16) and large earthquakes.

CONCLUSION

These 33 bullets collectively prove that any CO2 effect on global temperatures of the Holocene period (i.e. the last 11,650 years), including the 'Modern Warming' period since 1910, was nil or too small to detect. Almost certainly CO2's greenhouse effect is nullified by negative feedbacks greatly underestimated by the IPCC; this explains 'The Holocene Temperature Conundrum' and why 'runaway' warming is unknown throughout geological history. Holocene temperature changes were instead driven by solar-magnetic fluctuations (controlling cloudiness via the Svensmark Theory), superimposed on long-term cooling by Earth's declining axial obliquity. However, starting in 1940, warming due to airborne soot produced by humans burning coal and oil now outweighs the Sun's effect.

GERMAN TRANSLATION of the first 25 of these 33 bullet points ...
https://www.eike-klima-energie.eu/2019/06/18/25-punkte-die-beweisen-dass-co2-keine-globale-erwaermung-verursacht-diesmal-von-einem-geologen/

CHINESE TRANSLATION ...
https://www.researchgate.net/publication/334823689